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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.           | CONFIRMATION NO.       |
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| 10/565,709   | 01/24/2006  | Saied Abedi          | FUJL 22.280<br>(100794-01012) | 2992                   |
| 26304 7590 05/20/2008<br>KATTEN MUCHIN ROSENMAN LLP<br>575 MADISON AVENUE<br>NEW YORK, NY 10022-2585 |             |                      | EXAMINER<br>ZEWDU, MELESS NMN |                        |
|  |             |                      | ART UNIT<br>2617              | PAPER NUMBER           |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/565,709 | <b>Applicant(s)</b><br>ABEDI, SAIED |  |
|                              | <b>Examiner</b><br>Meless N. Zewdu   | <b>Art Unit</b><br>2617             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-32, 34 and 35 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34 and 35 is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-23 and 26-32 is/are rejected.
- 7) ☒ Claim(s) 7, 12, 24 and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/24/06 &amp; 4/27/06</u> . | 6) <input type="checkbox"/> Other: ____.  |

### DETAILED ACTION

1. This action is the first on the merit of the instant application.
2. The preliminary amendment, wherein claim 33 is canceled and claims 34-35 are added, has been recognized.
3. This action is based on the preliminary amendment comprising claims 1-32 and 34-35.

### *Specification*

The abstract of the disclosure is objected to because the characters shown as (Fig. 3) at the end of the abstract are not required; need to be canceled or incorporated within the text/body of the abstract. Correction is required. See MPEP § 608.01(b).

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: **A wireless communication Method and System for Scheduling Uplink Transmission Based on Quality of Service.**

Examiner found that the presentation of this disclosure is not up to the required standard. For that reason, the **Content of specification** has been included so as to aid applicant to make the necessary corrections

### Content of Specification

- (a) **Title of the Invention**: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and

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descriptive, preferably from two to seven words may not contain more than 500 characters.

- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.
- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
  - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
  - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in

general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (l) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

### ***Claim Objections***

Claims 1-32 and 33-35 are objected to because of the following informalities: the preliminary amendment should have canceled the original claims and the new claims should have continued from the last number in the canceled claims, In other words the new claims presented in the preliminary amendment should have begun from 34. Appropriate correction is required.

Claim 8 is objected to because of the following informalities: “service” on line 2 should be “services”. Appropriate correction is required.

Claim 1 is objected to because of the following informalities: “**a quality of service**” on line 8 should be --- the quality of service. Appropriate correction is required.

Claim 18 is objected to because of the following informalities: the features in claim 18 are duplicative. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this instance the phrase "that destination user equipment" is not determinable or known from anywhere in the claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 8-11, 21, 22, 26-28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (APA) in views of Kitazawa et al. (Kitazawa) (US 2003/0169746 A1) and Cheng et al. (Cheng) (US 7,336,632 B2).

**As per claim 1:** while the preamble is considered as an intended use, since it does not enhance the body of the claim, the APA discloses at least a method of transmitting data packets in an uplink from a source user equipment to a base station, the data packets being for onward transmission to a destination equipment (see paragraphs 0002-0003), the method comprising:

a service from the base station to a destination user equipment (see paragraphs 0002-0003);

scheduling uplink transmission from the source user equipment to the base station (see paragraphs 0002-0003). As indicated in paragraph 10 of the PGPUB of the specification, examiner considers paragraphs 0002-0009 therein as a prior art upon which applicant's improvement is made. But, the APA does not explicitly teach about determining a measure of a quality of service, as claimed by applicant. However, in the same field of endeavor, Kitazawa teaches about a unit that detects and measures service quality of a plurality of wireless terminals (see fig. 5; paragraphs 0056, 0058). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the teaching of the APA with that of Kitazawa for the advantage allocating radio resources for downlink packet transmissions that is in compliance with the service quality of a wireless terminal (see paragraph 0002). But, the APA in view of Kitazawa does not explicitly teach about scheduling uplink transmission independence on the measure of a quality of service, as claimed by applicant. However, in the same field of endeavor, Cheng teaches that a reverse-link communication can be effectuated at a desired quality of service including supporting inter-user and intra-user QoS (see col. 7, line 57-col. 8, line 8; col. 8, lines 43-64; col. 11, lines 23-30). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to further modify the above references (i.e., APA in view of Kitazawa) with that of Cheng for the advantage of selecting QoS -related information associated with a reverse-link communication service (see col. 3, lines 34-36).



**As per claim 2:** Kitazawa teaches about a method wherein the measure of a quality of service is determined at the base station (see paragraphs 0056, 0058).

**As per claim 3:** Kitazawa teaches about a method, wherein the base station transmits an indication of the quality of service to a user equipment (see col. 5, lines 4-21; claim 23).

**As per claim 4:** Kitazawa teaches about a method, wherein the base station transmits to a user equipment an indication of a transmission format to be used by the user equipment (see paragraph 0009).

**As per claim 5:** Kitazawa teaches a method, wherein the base station determines a measure of a quality of service for each of the plurality of destination user equipments (see abstract; paragraphs 0056, 0058).

**As per claim 8:** Kitazawa teaches a method, wherein a plurality of different measures of a quality of service are determined for each of the plurality of destination user equipments (see paragraphs 0058, 0060).

**As per claim 9:** Kitazawa teaches about a method, wherein at least one of the following measures of the quality of packet delivery from the base station to a destination user equipment is determined:

(a) throughput ratio

(b) ratio of satisfied packets

(c) base station buffer occupancy (see paragraphs 0017-0022). The prior art satisfies the at least one of the requirement of claim 9.

**As per claim 10:** Cheng teaches about a method, wherein, for each destination user equipment, the base station compares each of the measures of the quality of service for that destination user equipment with the corresponding measures of the quality of service for other destination user equipments, to give a plurality of relative measures (see col. 7, line 57-col. 8, line 8; col. 8, lines 43-64). Note, particularly, the inter-user QoS support.

**As per claim 11:** Cheng teaches about a method, wherein the base station obtains at least one of the following relative measures:

- (a) distance from average throughput ratio
- (b) distance from minimum throughput ratio
- (c) distance from minimum quality of service
- (d) distance from minimum buffer length (see col. 8, lines 43-64). The prior art

satisfies the at least one of the requirements of claim 11.

**As per claim 21:** Kitazawa teaches about a method, wherein a source user equipment receiving an indication of a good quality of service transmits data packets to the base station at a lower rate than would otherwise be the case (see paragraphs 0056, 0058-0059, 0065).

**As per claim 22:** Kitazawa teaches a method, wherein a source user equipment receiving an indication of a poor quality of service transmits data packets to the base station at a higher rate than would otherwise be the case (see paragraph 0058).

**As per claim 26:** the APA teaches about a method, wherein the base station operates a schedule mechanism for downlink transmission (see paragraphs 0002-0003).

**As per claim 27:** Kitazawa teaches about a method, wherein the base station transmits the data packets directly to the plurality of destination equipments (see abstract; fig. 2; claim 6).

**As per claim 28:** Cheng teaches about a method, wherein the base station transmits the data packets to the plurality of destination user equipment via a network (see col. 6, lines 49-67). Motivation is same as provided in the rejection of claim 1 above.

**As per claim 31:** most of the features of claim 31 are similar to the features of claim 1, except --- a transmission format to be used user by a user equipment and a transmitting unit which transmits to the user equipment an indication of a transmission format to be used by the user equipment, which is taught by the APA (see paragraph 0008).

Therefore, claim 31 is rejected on the same ground and motivation as claim 1.

Claims 6, 13-15, 23, 29, 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claims above, and further in view of Lyon (US 7,373,420 B1).

**As per claim 6:** the above references do not explicitly teach about a method, wherein the base station determines a credit value for each destination user equipment, the credit value being based on the quality of service, and the base station transmits/distributes each credit value to the corresponding source user, as claimed by applicant. However, in the same field of endeavor, Lyon teaches about a method and apparatus for weighted fair queuing, wherein a credit management determines and allocates credits (credit values) to entities identified in the active credit queue (see col. 6, lines 47-56; col. 5, lines 35-52). Therefore, it would have been obvious for one of

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ordinary skill in the art at the time the invention was made to further modify the above references with the teaching of Lyon for the advantage of allowing each flow passing through a network to have a fair share of network resources (see col. 1, lines 12-15).

**As per claim 13:** the references applied to claim 1 above references teach about a measure of quality of service and determining a time and/or rate of packet transmission. The difference feature in claim 13, which is a source equipment (an entity) receiving a credit value is taught by Lyon (see col. 4, lines 24-62; col. 6, lines 36-56. Motivation is same as provided in the rejection of claim 6.

**As per claim 14:** the APA teaches a method, wherein the source user equipment determines the time and/or rate of packet transmission based on a measure of radio channel conditions (see paragraphs 0005, 0008).

**As per claim 15:** the APA teaches about a method, wherein the source equipment determines the time and/or rate of packet transmission based on additionally on the type of service (see paragraphs 0002, 0008). The type of data is determinable from the Transport Format Combination Set (TFCS).

**As per claim 23:** Lyon teaches about a method, wherein a source user equipment (an entity) receives credit values (see col. 4, lines 24-62; col. 6, lines 47-56). When the references are combined the reception (thus stored) of the credit values will be based on the quality of services, as discussed in the rejection of claim 1 above.

**As per claim 29:** Lyon teaches about a method, wherein a new credit value is periodically determined and sent to the source user equipment (an entity) (see col. 4, lines 24-62; col. 7, line 57-col. 8, line 24; col. 8, line 62-col. 9, line 12).

**As per claim 30:** parts of the features of claim 30 are similar to the features of claim 1 and are rejected on the same ground and motivation as claim 1. But, the references applied to claim 1 do not explicitly teach -- producing unit which produces a credit value to a source user equipment (an entity) and a transmitting unit which transmits the credit value to a source user equipment (an entity), as claimed by applicant. However, in the same field of endeavor, Lyon teaches about a method and apparatus for weighted fair queuing, wherein a credit management determines and allocates credits (credit values) to entities identified in the active credit queue (see col. 6, lines 47-56; col. 5, lines 35-52). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to further modify the above references with the teaching of Lyon for the advantage of allowing each flow passing through a network to have a fair share of network resources (see col. 1, lines 12-15).

**As per claim 32:** the features of claim 32 are similar to the features of claims 1 and 30. When the references are combined the scheduling uplink transmission will be in dependence on the credit value. Therefore, claim 32 is rejected on the same ground and motivation as claims 1 and 30.

Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 1 above, and further in view of Gholmich et al. (Gholmich) (US 2004/0147276 A1).

**As per claims 16:** the references applied to claim 1 above do not explicitly teach about a method wherein uplink transmissions are scheduled using rate scheduling, as claimed by applicant. However, in the same field of endeavor, Gholmich teaches that a reverse-

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link scheduling using rate (see paragraph 0004). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to further modify the above references with the teaching of Gholmich for the advantage of achieving a desired reverse link “fairness” objective, to achieve a “maximum throughput” objective (see paragraph 0004).

**As per claim 17:** Gholmich teaches about a method, wherein uplink transmissions are scheduled using hybrid rate-time scheduling (see paragraph 0004). a particular rate at a particular time same as hybrid rate.

base station grants a mobile station

**As per claim 18:** the feature of claim 18 is same as the features of claim 17. Because the features of claim 18 are repetitive, only of the features is considered and thus no a requirement for switching. Thus, claim 18 is rejected on the same ground and motivation as claim 17.

Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references applied to claim 1 above and further in view of Lee et al. (Lee) (US 2002/0155853 A1).

**As per claim 19:** the references applied to claim 1 above do not explicitly teach about a method, wherein the rate of uplink transmission is varied by adjusting the modulation and coding scheme level, as claimed by applicant. However, in the same field of endeavor, Lee teaches a reverse-link in a mobile communications system, the modulation mode and/or the channel coding can be adaptively adjusted according to changes in the wireless channel conditions (see paragraph 0019). therefore, it would

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have been obvious for one of ordinary skill in the art at the time the invention was made to further modify the above references with the teaching of Lee for the advantage effective use of wireless channels and allowing high-speed data transfer on the reverse link (see paragraph 0019).

**As per claim 20:** Lee teaches about a method, wherein the rate of uplink transmission is varied by adjusting the intervals at which the uplink transmission takes place (see paragraph 0019).

***Allowable Subject Matter***

Claims 34 and 35 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach or fairly suggest scheduling an uplink transmission based on the destination's quality of service and a credit value, wherein the quality of service and the credit are produced by a base station and transmitted to a user equipment for scheduling the uplink transmission, as recited in claims 34 and 35.

Claims 7, 12, 24 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meless N. Zewdu whose telephone number is (571) 272-7873. The examiner can normally be reached on 8:30 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bost Dwayne D can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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Any inquiry of a general nature relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

/Meless N Zewdu/  
Primary Examiner, Art Unit 2617  
5/20/2008